



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,018	02/20/2004	Christoph Gurtler	PO-7979/LeA 36,396	2512
157 7590 07/12/2007 BAYER MATERIAL SCIENCE LLC 100 BAYER ROAD PITTSBURGH, PA 15205			EXAMINER GILLESPIE, BENJAMIN	
			ART UNIT 1711	PAPER NUMBER
			MAIL DATE 07/12/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/784,018	<b>Applicant(s)</b> GURTLE ET AL.	
	<b>Examiner</b> Benjamin J. Gillespie	<b>Art Unit</b> 1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-8,14-18,22-24 and 29-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-8,14-18,22-24 and 29-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 3, 5-8, 14-18, 22-24, and 29-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al (2003/0096103) in view of Yagii et al ('015). Watanabe et al teach a coated metal plate and method for production, wherein the coating consists of a one-component polyurethane based baking system comprising blocked polyisocyanate, polymers having isocyanate-reactive groups, catalyst, water, and further additives and auxiliaries, wherein all components are present in amounts that correspond to the claimed ranges (Abstract, paragraphs 30, 31, 32, 36, 37, and 53). In particular, the blocked polyisocyanate consists of hexamethylene and isophorone diisocyanate, and the isocyanate-reactive polymers consist of polyesters (Paragraphs 30 and 33).
2. Although diisocyanates may not inherently be hydrophilic, depending on the blocking agent utilized that property can change. Watanabe et al teach to use carbamic acid blocking agents, once neutralized allow the diisocyanate to be water dispersible (Paragraph 34 and 36). Since dispersion of the resin and blocked diisocyanate occurs before curing, it would have been obvious to modify the diisocyanate into a hydrophilic compound so that its content would be homogenous throughout the dispersion.
3. Watanabe et al goes on to disclose methods of production, wherein the catalyst is added to blocked polyisocyanate and isocyanate-reactive polymer mixture prior to being dispersed in

Art Unit: 1711

water (Paragraphs 36 and 37). In paragraph 53, Watanabe et al teach another method wherein the blocked polyisocyanate, isocyanate-reactive polymer and catalyst are added together in the presence of solvent before dispersion in water. However, Watanabe et al teach the catalyst to consist of oxides of molybdenum but fail in teaching the specific claimed compounds as well as blocked aromatic polyisocyanates.

4. Yagii et al teach the production of polyurethane, wherein a urethane intermediate is thermally broken and later utilized in the formation of a polyurethane final product. The thermal decomposition is aided through the use of molybdenum acetylacetonate and molybdenum oxide catalysts (Col 9 lines 45-58). Although the intermediate is the reaction product of a dialkyl carbonate and diamine, the resulting intermediate structure is the same of an alcohol-blocked isocyanate. Upon thermal decomposition a free isocyanate group is produced, which is then reacted with hydroxyl functional material, yielding a urethane group. Patentees teach the decomposed urethane group yields diisocyanate consisting of isophorone, hexamethylene and xylene diisocyanate (Abstract, Col 9 lines 1-22, 31-44). Finally, Yagii et al teach a method of thermal decomposition that preferably feeds the urethane composition into catalyst containing solvent (Col 10 lines 49-52).

5. Therefore it would have been obvious to utilize the catalyst and method of introducing the reaction starting components to the solvent catalyst mixture as taught by Yagii et al in Watanabe et al because it facilitates the de-blocking of the same diisocyanate compounds blocked with mono-alcohols, and Watanabe et al has already suggest the use of molybdenum oxide catalysts as useful curing catalyst.

***Response to Arguments***

Art Unit: 1711

6. Applicant's arguments filed 5/10/2007 have been fully considered but they are not persuasive. Applicants argue that Watanabe et al (2003/0096103) in view of Yagii et al ('015) do not render obvious the claimed polyurethane because there is no teaching of the claimed tungsten or molybdenum compounds, the composition of Watanabe et al is not a one component baking system, and the application of Yagii et al is different from Watanabe et al.

7. Firstly, claims 1 and 3 list "molybdenum oxides" as possible organic and/or inorganic compounds, which Watanabe et al teach as previously discussed. Secondly, Yagii et al specifically disclose that in addition to molybdenum oxides, molybdenum acetylacetonate  $[\text{MoO}_2(\text{acac})_2]$  is a useful molybdenum compound. Furthermore, Watanabe et al is drawn to a one-component coating and paragraph 38 clearly teaches that baking at a temperature between 100°C and 200°C cures the final coating.

8. Regarding Yagii et al, although the reference is drawn to the formation of a urethane intermediate, which is later thermally decomposed, the determination that a reference is from a nonanalogous art is twofold. First, it is decided if the reference is within the field of the inventor's endeavor, which in this case is polyurethane based coatings. Still, if this criteria is not satisfied, it must be determined whether the reference is reasonably pertinent to the particular problem with which the inventor was involved. *In re Wood*, 202 USQ 171, 174; *In re Clay*, 23 USPQ.2d 1058.

9. It is noted that Yagii et al requires thermal decomposition of urethane intermediates, however these intermediates are then used to produce a final polyurethane coating. Furthermore, the intermediate of Yagii et al shares the same structure as alcohol based blocked polyisocyanate, and the disclosed molybdenum compounds facilitate the deblocking of said polyisocyanate

compounds thereby aiding the formation of the final polyurethane coating. Although Watanabe et al do not disclose the formation of an intermediate, or at least one the same as Yagii et al, the deblocking chemistry of both references is the same. Therefore the teaching of Yagii et al is pertinent prior art because it teaches what catalysts are useful in deblocking polyisocyanate in the formation of polyurethane coatings.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin J. Gillespie whose telephone number is 571-272-2472. The examiner can normally be reached on 8am-5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1711

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

B. Gillespie

  
RABON SERGENT  
PRIMARY EXAMINER